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IV. SCHISTOSOMIASIS AND KALA-AZAR

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164 Schistosomiasis is a fecal-borne disease caused by a parasitic flatworm, schistosoma japonicum, more commonly called the Asiatic blood fluke. Schistosoma japonicum is a microscopic organism which infests two hosts during its life-cycle. Emerging in feces from a human or other mammal host, the eggs hatch rapidly in fresh water, producing an embryo which seeks its secondary host, a type of fresh-water snail. The parasite rapidly penetrates the softer parts of the snail and encysts within its shell. When the cyst-wall ruptures, the cercaria emerges. It can exist for about two days, but will perish afterward if it has not found a host. The life cycle of schistosoma japonicum continues outside the host's body; but the blood fluke stays within the intestines, causing a debilitating disease known as schistosomiasis. The primary symptom is an irritation at the point where the cercaria bores into the skin; but this is a minor rash and unlikely to cause serious concern. The incubation period, about one month, is attended by further minor discomforts; rash, headaches, low fever, nausea, vague internal pains, and diarrhea. When the intestinal worms mature, the symptoms are intensified: itching, fever, fatigue abdominal discomfort, and enlargement of the liver. Dysentery is heavy and exhausting. During the acute stage, exercise aggravates the symptoms of the disease. Once this period of three or four months is over, schistosomiasis, like

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744 164 syphilis, appears to vanish, although it actually enters upon a chronic stage which resists treatment. The symptoms do no reappear for months or years, but they are serious when they do: loss of weight, great enlargement of the spleen, anemia, swelling of the ankles, cirrhosis of the liver, dysentery, and dropsy. The disease is often fatal, though sometimes under another guise, as when the lesions cause intestinal cancer or when pneumonia attacks the weakened victim.[11]

Nine provinces in East and Central-South China are subject to this disease because of the climate favorable to its conditions, and its close association with rice-culture.[12] But it is most serious in East China, particularly along the middle and lower parts of the Yangtze River and along the Ch'ien-t'ang River in Chekiang.[13] Although human beings are the chief victims of this disease, domestic animals sometimes are affected. One report made in 1951 states that in 100 counties (which amounts to one-fourth of the total number of counties in East China) of the four provinces of Kiangsu, Chekiang, Fukien, and Anhwei, there were 10,000,000 people

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11. Frank A. Kierman Jr., The Fluke that Saved Formosa, Cambridge, (M.I.T.), 1954, pp. 6-7.

12. J. C. Scott, Health and Agriculture in China, London, 1952, p. 41.

13. Chi h-fang Jih-pao [Liberation Daily], Shanghai, April, 7, 1950, p. 5.

744/64 suffering from schistosomiasis. In one village in southern Kiangsu, 97 per cent of the total population were victims of schisotosomiasis.[14] The disease spreads very rapidly among the farming population, causing a high death rate and hampering agricultural production. The report also reveals that in 1949, among 41,589 members of the "Liberation Army" stationed in the suburbs of Shanghai, 13,284 men contracted this disease.[15] For this reason, schistosomiasis has a high priority in medical prevention work in the health program of East China. In 1952, students and faculty members of the medical schools in Shanghai and Hangchow were mobilized during their summer vacation to treat sufferers in rural areas.[16] According to a regional progress report covering a period of two years prior to November 1951, there were more than 10,000,000 people suffering from schistosomiasis in East China, of which only 14,000 were cured.[17] In a recent issue of the medical journal of the China Medical Society, a Communist organization, it is reported that 17 specialized preventive agencies, 61 health stations, and 132 medical units, with a working force amounting to 3,000 have been established to combat schistosomiasis in East

14. Ibid., January 6, 1952, p. 3.
15. Ibid., March 6, 1952, p. 3.
16. Ibid., March 6, 1952, p. 3.
17. Current Background, Ibid.

1:Stanford U. S-4, 5 1956 AF15 East China
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744 China. According to the same source, 55,355
164 people were cured in 1953, and much research on the menacing disease is said to be in progress on the China Mainland.[18]

While the four southern provinces of East China suffer from schistosomiasis, Shantung in the north is exposed to a different communicable disease, kala-azar, more commonly called black fever. Kala-azar is a severe, commonly fatal infectious disease caused by a parasitic protozoan and characterized by fever, progressive emaciation enlargement of the spleen, and anemia. While schistosomiasis spreads along the Yangtze River, kala-azar is found along the Yellow River and along the route of the Lung-Hai Railway. In a 1950 report on Shantung Province, 700,000 cases of kala-azar were recorded.[19] In October 1951, Li Teh-ch'üan, Minister of Health of the Peking regime and widow of General Feng Yü-hsiang, made a report on epidemic prevention work. Eight medical centers specializing in the prevention and cure of kala-azar had been established, she said, and measures to exterminate the carriers of the disease (particularly

18. "Chung-kuo Tsai Fang-chih Hsüeh-hsi-ch'ung-ping Wan-t'i Shang So K'ai-chan Ti I-hsieh Yen-chiu Kung-tso" ["Some Research Work on Prevention of Schistosomiasis in China"], Chung-hua I-hsüeh Tsa-chih [Chinese Medical Journal], Peking, July 1955, pp. 610-14.

19. Compendium of Government Reports, p. 632.

744 a mosquito known as pai-ling) had been adopted.[20]
164 A progress report given in November 1951 revealed that in 1950-51, 300,000 people were suffering from kala-azar in Shantung, of which 60,000 were cured.[21] Recent Communist reports indicate that many experimental research projects for the control of kala-azar had been established. In East China, the same source reveals, 220,000 sufferers were cured in the period 1950-54, 3,259 rural doctors were mobilized to receive special training, and 1,058 prevention units were organized.[22]

V. THE PATRIOTIC HEALTH DRIVE

744 In order to integrate health work with the mass propaganda drive against the so-called bacteriological warfare of the United States, the Chinese Communists launched the Patriotic Health Drive in 1952. It was animated by the fighting in Korea and became a part of the Resist-America-Aid-Korea Movement. It proved so economical to the government and so successful that it was established as an annual health drive. The purpose of the movement is, in short, to solicit and obtain free labor in the

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20. Liberation Daily, Shanghai, January 6, 1952, p. 3.

21. Current Background, Ibid.

22. "Hsin Chung-kuo Hei-je-ping Fang-chih Chi Yen-chiu Kung-tso Ti Chu-yao Ch'eng chiu" [Some Principal Achievements in the Research and Work on the Prevention of Kala-azar in New China"], Chung-hua I-hsüeh Tsa-chih [Chinese Medical Journal], Peking, July 1955, pp. 606-09.

759 "political understanding" in both their thought and practical work.[35] No doubt, to members of the medical profession, "thought remolding" must have been a terrible ordeal. Because so many medical workers were required in Korea, there must have been a critical shortage of doctors and nurses in most sections of China, and the shortage of medical personnel may have been another reason for the energetic promotion of the Patriotic Health Drive.

• 164 In an article, The Fluke that Saved Formosa,[36] by Frank A. Kierman, Jr., of the Center for International Studies at M.I.T., evidence is given that the spread of schistosomiasis prevented the Chinese Communist invasion of Formosa in 1950. When Communist troops were in training for the invasion in Fukien and Chekiang provinces, an epidemic of schistosomiasis struck. By January 1950, an estimated 30,000-50,000 soldiers had been infected. The invasion was postponed, and with a change in the international situation, the Chinese Communists lost their opportunity to attack Formosa. From

35. I-wu Kung-tso-che Pi-hsü Chin-hsing Ssu-hsiang Kai-tsao [Medical Workers Must Reform their Thoughts], Shanghai, Hua-tung I-wu Sheng-huo she, 1952, p. 41.

36. Frank A. Kierman Jr., The Fluke that Saved Formosa, Cambridge, Massachusetts Institute of Technology, 1954.

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164 recent reports in newspapers and journals published on the Chinese Mainland, it seems that schistosomiasis still remains to be conquered. Since it affects a large number of rice-growing agricultural population, it is an extremely serious problem in Communist China.

2: Murphy G-4 (no date) 1953 AF15 East China AF15

gallons by 1936. Two Chinese-owned waterworks were also in operation, one in Chapei (part of the Chinese municipality — map 3) established in 1921 and drawing water from an intake on the Whangpoo just above Woosung. This was the largest Chinese-owned waterworks in China, and supplied an average of about ten million gallons daily. The other Chinese waterworks was built in 1906 in Nantao, with an intake just upstream from that of the French company, but it operated intermittently until 1930, and by 1936 supplied only about three million gallons daily. These two Chinese waterworks served a tiny fraction of the Chinese population outside the foreign settlements, primarily in the areas immediately adjoining the Settlements on the northwest and south. Both plants used sand filters and chlorine to purify their water, but in 1926 the supply of the Chapei company was found to be grossly polluted and probably responsible for a cholera epidemic in that year in which several foreign as well as several hundred Chinese cases were reported.[12]

Aquiferous sand strata with water pockets of some size underlie parts of the city's site at depths of 100 feet or more, and most of the textile and paper factories have tapped this relatively pure and soft water by wells deeper than those dug during the early days of the Settlement. Drilling in the alluvium is cheap, but while water thus obtained appears to be satisfactory for soft-water using industries, it is questionable whether it is renewable and will not soon be exhausted, and certainly whether it is adequate to supply even a small part of the city's needs.

Despite the chemical purity of the water supplied by at least the two foreign companies, most foreign residents continued into the 1930's to boil and filter it before using it for drinking, an old habit which died hard and which was doubtless prolonged by the unpleasant taste of the heavily treated water. The total piped and treated water consumption of the entire city in 1936, approximately 100 million gallons a day exclusive of private wells, would not have supplied New York in the same year (with a population a little less than twice that of Shanghai) for more than two and a half hours.*

* New York used approximately one billion gallons a day in 1936, according to the 1936 edition of the New York *World Almanac*.

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

THE PUBLIC HEALTH DEPARTMENT of the Shanghai Municipal Council exercised constant and vigorous supervision over the food supplies of the Settlement. Both incoming livestock and meat supplies were carefully inspected, the erection of a modern abattoir by the Council in the last decade having materially contributed to a sound meat supply. Dairies increased in number, and, through the efforts of the authorities, improved in quality. The sale of milk was under strict control. Positive measures were taken to induce dairies to use modern procedures. Market produce was inspected daily, both on its way into the city from outlying farms and after it had been placed on sale; food vendors on the streets and all food shops and stalls were subjected to licence and supervised. Bakeries also came in for close attention. In short, all that could be done to reduce food contamination, and hence to limit the incidence of germ-borne disease, was done by the authorities.

IN THE LAST DECADE interest has been growing in China in the study of nutrition. Much useful scientific knowledge has been accumulated, particularly through the work of scientific investigators associated with the Henry Lester Institute of Medical Research, the Peking Union Medical College, and Yenching University. The existence in Shanghai of large camps of destitute refugees after the outbreak of hostilities in 1937 gave scientists a sad but useful opportunity to study the results of various minimal diets. Little of the available knowledge had received popular attention in the city.

Reference has been made to the fact that workers in many industrial undertakings, and indeed in many commercial enterprises, were housed and provided with food where they worked.[3] In larger plants food might be bought, cooked and served by the factory. In smaller ones the supply of food to workers was undertaken by a *pao fan-ti*, who delivered to factories food cooked elsewhere. Remuneration has been, then, for many workers partly in food. Under these circumstances it is important that a knowledge of nutrition, and of the effect of malnutrition on the health of employees, should be general. There has been a general acceptance of the obvious fact that if workers are not properly fed—and improper feeding is commonly associated only with insufficient food

[3] See Chapter IV.

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

146 —they will not work well. What has been too little understood is that the wrong food as well as insufficient food can produce inefficiency and disease. Even before the 1937 refugee influx, beriberi was prevalent, especially among young workers newly arrived from the country and as yet ill adapted to the polished-rice diet of the city. On humid summer days it was not uncommon to have the Council's ambulance service report that a young worker had been taken to the hospital in a state of collapse, and that collapse was sometimes fatal. The cause of death often proved to be acute beriberi, an acute diet-deficiency disease which is induced by the absence from the diet of certain vitamins. This particular problem has been recognised by the authorities, and prior to the hostilities some beginning toward its solution had been made.

146 In 1937, the year of the outbreak of hostilities, an interesting
164 dietary experiment was in progress in the eastern district of the
654 International Settlement. Under the joint auspices of the Henry Lester Institute of Medical Research and the Industrial Division of the Council, some 75 young workers were fed in a "kitchen" established for the purpose. The scientific planning of the work was directed by Dr. B. S. Platt of the Institute. The boys were employed in the manufacture of flashlight bulbs, and while they worked were seated at benches, crouching over gas flames blowing glass and fixing filaments in glass rods. In the moist Shanghai summer the atmosphere of these workshops, which are usually in residences converted to industrial use, crowded and unsuitable, becomes almost unbearable. In the summer preceding the experiment, literally dozens of young workers had shown beriberi symptoms whose onset appeared to have been aggravated by the heat and humidity.

Leaving as controls certain of these flashlight factories to pursue their usual policy of food supply, the authorities induced the owners of three others to send their young workers to the kitchen for their meals three times daily. The owners paid an amount slightly less than they would have paid to other food suppliers—$4.60 per month per worker instead of $4.80.[4] The experiment began in February 1937, and was suspended when street fighting raged in the vicinity of the kitchen in the middle of August, six months later. During that half-year and through two and a half months of humid summer weather there was no evidence of any

[4] At pre-war dollar purchasing power.

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

dietary-deficiency disease among the 75 workers fed in the kitchen, while many young workers in neighbouring factories acting as the scientific controls, were suffering from disease.

The country habit of storing rice in the husk, and dehusking only that portion which is necessary for the food of the family during the day, no longer holds for city life. Rice is dehusked in the country and transported husked and milled to the city to save transportation costs, and because highly milled rice keeps well. After long storing, however, residual fats present become rancid, and in order to make the rice palatable, it must be washed. First with the milling and later with the washing disappear the essential vitamin contents which prevent dietary-deficiency disease. The experiment was designed to prove that, if rice were stored in the husk, and only milled immediately prior to use, it was unnecessary to wash it, and the vitamin content, therefore, remained to check the onslaught of deficiency disease. No other change from normal food eaten in factories was made in the diet. No additional vegetables or fruits were given. Reliance was placed only on prevention of loss of vitamins in the rice.

The intention had been to make the kitchen the nucleus of a district food service which would apply the results of the study on a wider scale as a demonstration. It was ironic that war should have interrupted the experiment, and that it should not only have become impossible to make any application of the important facts demonstrated in the experiment, but that stocks of Chinese rice, milled or unhusked, should virtually disappear from the Shanghai market, and that the city should have to depend for the ensuing five years on imported rice, all husked, and very high in price.

It might be thought that, with the price of rice soaring out of all bounds, factory owners who supply food to their workers would reduce the quantity of rice supplied, mix it with other cereals, or vary it with beans. But both management and workers have a mistaken idea that, if at all possible, the usual number of bowls of rice must be provided, whatever happens to the "side dishes" of bean curd, vegetables, fish or, rarely, meat. In consequence, expensive imported polished de-vitaminised rice continued to be eaten in former quantities. If the "side dishes" were reduced, as they were in size and variety in order to decrease costs, this last source of nutrients also disappeared. It is small wonder, then, that by 1941, and

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

146 before the even worse situation following Pacific hostilities, signs of
164 deficiency disease were apparent even among workers fortunate
435 enough to have full-time employment in factories.
262 There is much work for the Shanghai authorities of the future to do in the matter of food. The Public Health Department's long history of supervision of the city's food supply, its war against flies
744 and fly-borne diseases, has represented one phase of the food issue.
146 The Supply Committee's efforts to obtain actual supplies represents a second. Instruction, particularly of employers, in the nutrition aspects of food supplied to workers is a third necessity. The food intake of workers in certain factories where workers are both housed and fed has been analysed in the past and found to be woefully lacking. The attention of certain managements was called to this situation, and some improvement resulted.

The managements of 16 factories where doctors or nurses are employed were induced to keep records of food supplied with a view to seeing how near it came to nutrition standards. In 37 other plants also records were kept. Through these means there should in future be a decrease in dietary-deficiency diseases. Though the provision of food as part of earnings is to be deprecated, it is possible by this means to control for his good the worker's food much more easily than if individual housewives have to be taught what to do. On the other hand, unless the group feeding is right feeding, a whole working force can develop deficiency diseases. In the sense that workers had no option in many cases but to accept the food which the employers provide, it can be said that where deficiency disease resulted therefrom their wage was in fact disease.

THE NECESSITY FOR the education of management, workers, and the public generally in the foods which should be eaten to ensure health and prevent frank deficiency diseases was recognised by the Division. A film was in the making when Pacific hostilities caused suspension of the effort. Two western industrial enterprises and one Chinese had agreed to provide the $10,000 necessary for the film production. A food exhibit had been planned in co-operation with the Chinese Medical Association to take place in the industrial district. It was designed to demonstrate through graphic means the results of wrong feeding. The public would well be able to recognise in pictures the gross deficiency diseases which they

3: Hinder G-5 (1933-1942) 1944 AF15 East China AF15

CHAPTER X

CHILD PROTECTION

ANY ADEQUATE PROGRAMME for the protection of children by the authorities in Shanghai seemed in the past to present almost insuperable problems. The evolution of policy in the general field of child welfare involved difficulties of finance and other obstacles sufficient to deter the stoutest heart. The high birth rate and the size of the population even in normal times meant that the city had a child population as large as that of some small countries. Housing congestion and unhygienic living quarters, together with inadequate nutrition, traceable in part to the low earnings of workers, caused literally thousands of children to live under conditions that contributed to a high death rate. If they survived they suffered in many cases chronic ill-health. If conditions were hard for the children of wage earners, they were harder still for those in families where there was unemployment, and for those who had no one to care for them.

The type of child welfare programme familiar abroad, where governments are aware of the necessity of caring for the citizens of the future and ready to appropriate large funds for that purpose, was not in the past considered possible in the International Settlement of Shanghai. The sources of the Council's income, ultimately dependent on the capacity of the people to pay, were strictly limited. The Council took the general view that "poor relief" was not feasible, since it had no control over entrance to the Settlement.[1] In practice, however, certain forms of relief were undertaken from Council funds. The Council for years made limited contributions as grants-in-aid to institutions which cared for children coming into the hands of the police—children who were lost, abandoned, abducted, exploited, ill-treated or otherwise victims of circumstance. Indeed, for long the police in Shanghai were the social workers of the Settlement. Police stations saw many a human drama in which children were concerned. Police rescued

[1] See Chapter XI.